What is claimed is:

1. A multiple wavelength semiconductor laser monolithically having a plurality of edge emitting type semiconductor laser devices having different wavelengths, wherein:

a common low reflection multiple layer film that is a three-layer dielectric film comprised of a first dielectric film, a second dielectric film, and a third dielectric film that are successively formed outwardly, the common low reflection film being formed to have a same film thickness is provided on light emitting facets of said plurality of edge emitting type semiconductor laser devices, and

a refractive index of said second dielectric film is larger than a refractive index of said first dielectric film and a refractive index of said third dielectric film.

2. The multiple wavelength semiconductor laser as set forth in claim 1, wherein:

each of said first dielectric film to said third dielectric film is one of an Al_2O_3 film, a SiN_x film, a SiO_2 film, a SiC film, an AlN film, and a GaN film.

3. The multiple wavelength semiconductor laser as set forth in claim 1, wherein:

an oscillation wavelength of said plurality of edge emitting type semiconductor laser devices is any one of a 650 nm band, a 780 nm band, and a 850 nm band.

4. The multiple wavelength semiconductor laser as set

forth in claim 2, wherein:

an oscillation wavelength of said plurality of edge emitting type semiconductor laser devices is any one of a 650 nm band, a 780 nm band, and a 850 nm band.

5. A method for manufacturing a multiple wavelength semiconductor laser monolithically having a plurality of edge emitting type semiconductor laser devices having different wavelengths, the method comprising the steps of:

at a time of forming a laser bar by cleaving a wafer on which a resonator structure is formed and providing a common low reflection film on a light emitting facet of said plurality of edge emitting type semiconductor laser devices exposed on one cleaved facet of the laser bar,

(1) selecting a first dielectric film and a third dielectric film and then a dielectric film as a second dielectric film having a refractive index that is larger than a refractive index of the first dielectric film and a refractive index of the third dielectric film so as to dispose a three-layer dielectric film composed of said first dielectric film, said second dielectric film, and said third dielectric film as said common low reflection film;

(2) determining the film thicknesses of said first dielectric film and said second dielectric film;

(3) calculating a reflectivity for said three-layer dielectric film for oscillation wavelengths of said plurality of edge emitting type semiconductor laser devices with a parameter of a film thickness of said third dielectric film so as to obtain a relationship

between the film thickness of said third dielectric film and the reflectivity of said three-layer dielectric film; and

(4) selecting the film thickness of said third dielectric film in accordance with the relation between the film thickness of said third dielectric film and the reflectivity of said three-layer dielectric film so that the reflectivity of said three-layer dielectric film for the oscillation wavelengths of said plurality of edge emitting type semiconductor laser devices satisfies a predetermined value or less.

6. The method for producing said multiple wavelength semiconductor laser as set forth in claim 5, wherein:

the step (1) includes a step of selecting as each of said first dielectric film to said third dielectric film an Al_2O_3 film, a SiN_x film, a SiO_2 film, a SiC film, an AlN film, or a GaN film.

7. The method for producing said multiple wavelength semiconductor laser as set forth in claim 5, wherein:

the oscillation wavelengths of said plurality of edge emitting type semiconductor laser devices are any one of a 650 nm band, a 780 nm band, and a 850 nm band.

8. The method for producing said multiple wavelength semiconductor laser as set forth in claim 5, further comprising the steps of:

in a case where the relationship between the film thickness of said third dielectric film and the reflectivity of said three-layer dielectric film obtained

at the step (3) does not satisfy the predetermined value or less of the reflectivity for the oscillation wavelengths at the step (4),

(5) returning to the step (2) and determining another value of at least either one of the film thickness of said first dielectric film and the film thickness of said second dielectric film; and

(6) advancing to the step (3) and the step (4) and repeating a cycle of the step (2) to the step (4) until the film thickness of said third dielectric film can be selected so that the reflectivity for the oscillation wavelengths satisfies the predetermined value or less.

9. The method for producing said multiple wavelength semiconductor laser as set forth in claim 8, further comprising the step of:

in a case where the relationship between the film thickness of said third dielectric film and the reflectivity of said three-layer dielectric film does not satisfy the predetermined value or less of the reflectivity for the oscillation wavelengths at the step (6),

(7) returning to the step (1), selecting another dielectric film as at least any one of said first dielectric film to said third dielectric film of said three-layer dielectric film, and repeating the cycle of the step (2) to the step (4).

10. The method for producing said multiple wavelength semiconductor laser as set forth in claim 9, further comprising the step of:

in a case where the relationship between the film thickness of said third dielectric film and the reflectivity of said three-layer dielectric film does not satisfy the predetermined value or less of the reflectivity for the oscillation wavelengths at the step (7),

(8) returning to the step (1), selecting another dielectric film as at least one of said first dielectric film to said third dielectric film of said three-layer dielectric film, and repeating the cycle of the step (2) to the step (4).